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QUALITATIVE TESTS FOR ANTIOXIDANTS

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Specifically BHA and BHT

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QUALITATIVE TESTS FOR ANTIOXIDANTS

Specifically BHA and BHT

By L. R. Dugan, Jr.

The need for a simple, sensitive, and easily performed test for antioxidants in lard has been emphasized by the requirement of some countries that no antioxidant may be present in lard imported into that country. Some antioxidants are readily detected but others, such as BHA and BHT, are not so readily detected.

Methods for such tests have been developed by Miss Herta Laszlo working with the writer at the American Meat Institute Foundation. Miss Laszlo, who is a chemist in the Division for Inspection of Animal Products of the Ministry of Agriculture in Brazil, spent a year in the Foundation laboratories as an American Association of University Women Fellow.

The details of the qualitative tests for BHA and BHT are as follows.

Reagents

The reagents used in the qualitative color tests are a 0.5% solution of sodium nitrite in distilled water and a 0.5% solution of sulfanilic acid in distilled water containing 5.0% concentrated hydrochloric acid. The nitrite solution should be freshly prepared every

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three weeks. The solutions are kept refrigerated and are mixed each working day in a ratio of 1:100 of nitrite to sulfanilic acid to pre-form the reagent (diazobenzenesulphonic acid) known as Ehrlich reagent.

Test for BHA

The test for BHA is performed in a test tube by vigorously shaking 1 ml. melted fat or oil with 2 ml. 72% ethyl alcohol. The emulsion formed is shaken with 1 ml. Ehrlich reagent and then immediately with 1 ml. 1 normal NaOH solution. The development of a red-purple color indicates the presence of BHA.

Test for BHT

Place 2 ml. melted fat or oil in a test tube and add 3 ml. 20% KOH in 95% ethyl alcohol. Shake until the solution becomes clear. Add 7 ml. Ehrlich reagent and shake well. If a salmon-pink color develops on standing for 30 minutes to 2 hours, the presence of BHT is indicated.

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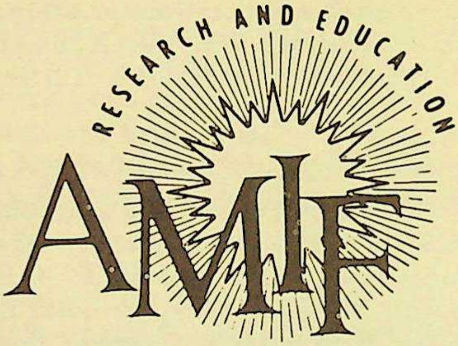
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